Groundwater

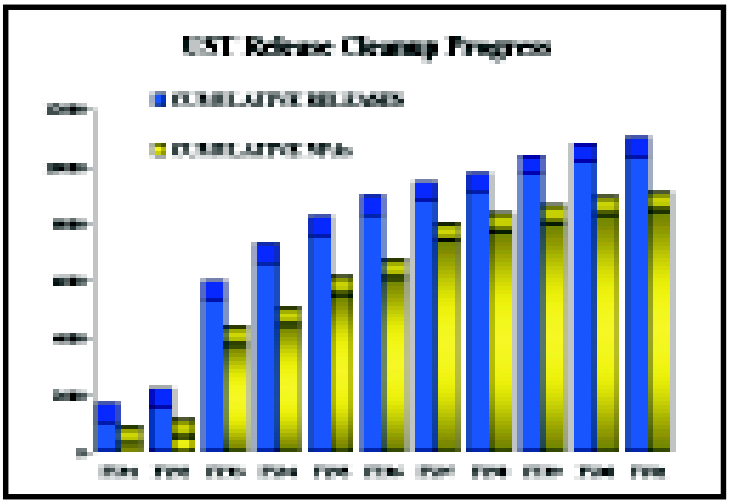
An important aspect of managing Alabama's water resources is protecting the States's groundwater. Two programs that aid in the protection of this valuable drinking water resource are the Source Water Assessment Program and the Alabama Wellhead Protection Program. The Source Water Assessment Program, requires that all water systems identify the area of recharge around the well or spring and that all potential contaminant sites be identified within the area of recharge. The federal date for completion of the Source Water Assessments is February 2003. Over half of the water systems in Alabama have completed the assessment requirements.

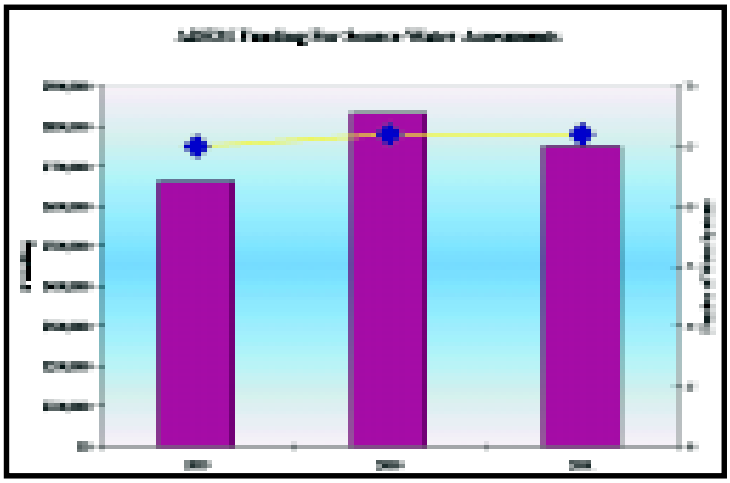
Once a utility has completed the assessment they can voluntarily implement a protection plan for their water system. The Alabama Wellhead Protection Program provides guidance to communities that wish to develop protection programs. The Groundwater Guardian, Drinking Water Protection Signs, and Groundwater Festival Programs are a few examples of the assistance provided by ADEM and included in the Wellhead Protection Program. The Alabama Rural Water Association has worked closely with ADEM to promote and initiate these programs at the local level.

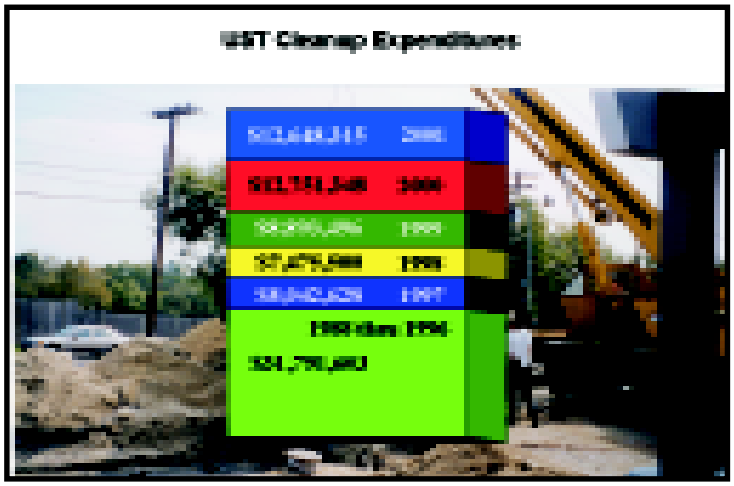
UST Corrective Action Activities

Releases from underground storage tank systems (USTs) in Alabama continue to be one of the leading causes of contamination of groundwater resources. Since 1987, over 10,300 releases of petroleum from USTs have been reported to the Department. Over the last 14 years, over 8,400 of the releases have been cleaned up and have received a notice of "No Further Action." The department is currently overseeing the assessment and cleanup of approximately 1,950 releases.

The department administers the Alabama Underground Storage Tank Trust Fund, which provides reimbursement to eligible tank owners and operators for cleanup of UST releases. During 2001, the UST Fund expended $12.6 million for eligible site cleanups. Approximately 1,200 UST release sites were eligible to participate in the reimbursement program.







ADEM Reservoir Water Quality Monitoring Program

ADEM's Reservoir Water Quality Monitoring (RWQM) Program entered its twelfth year in 2001. Since 1990, the program has progressed from limited monitoring to intensive water quality surveys where reservoirs are monitored monthly spring-fall, allowing sampling coverage of seasonal periods most critical to water quality. The longevity of the RWQM Program and its progression to intensive monitoring has fulfilled its initial objective of developing a long-term comprehensive database that can be used to determine trends in lake water quality.

In the years 2000-2001, the program's database allowed ADEM to begin development of lake-specific water quality criteria. The goal of the criteria is to establish lake nutrient targets necessary to maintain and protect existing uses. The targets will be expressed as chlorophyll a criteria in order to address the biological effect of nutrients to lakes. Criteria will be developed for all publicly-owned lakes in the state by 2004, with additional sampling scheduled during this period to gather necessary water quality data. Compliance monitoring of reservoirs with established criteria was initiated during April 2001 and continued monthly through October.

In 2001, the intensive survey of reservoirs in the Tombigbee and Escatawpa Basins was initiated during April, with monthly sampling of 33 mainstream and tributary embayment locations to occur through October. Completion of this intensive survey completes the initial monitoring rotation of all basins in the state. Reservoirs of the Warrior basin, last sampled in 1998, will be sampled again in 2002 as the second cycle of the basin rotation begins. In addition to the Tombigbee/Escatawpa reservoir intensive survey sampling, reservoir locations in Inland and Purdy Reservoirs and in the Chattahoochee River and Conecuh River basins were monitored once during August in accordance with the two-year critical-period monitoring rotation of all lakes in the state.

A number of reports from the Reservoir Monitoring Program are available from ADEM's Field Operations Division, with several soon to be available through the ADEM website.

14th Annual Coastal Cleanup Helps Build Awareness For Clean Beaches

The 14th Annual Coastal Cleanup was held in September 2001 as part of an international effort to raise awareness of the marine debris problem.

More than 3,000 volunteers gave their time and effort to scour 295 miles of beaches, shoreline, and waterways, collecting 95,000 pounds of trash in one day.

Alabama first joined the International Coastal Cleanup in 1987 with a group of 500 volunteers on Dauphin Island. Over the years the program has grown to include more than 26 sites throughout Mobile and Baldwin counties.

The event was coordinated by the Alabama Department of Conservation and Natural Resources, Coastal Section, and the People Against a Littered State (PALS). ADEM participated by providing vehicles and personnel to transport trash picked up by volunteers.

Each year volunteers discover some unusual items washed up on the coast. This year a 500-lb. ball of Styrofoam was found on the causeway and a 200-lb. ice-making machine was found at Wolf Bay.

Fish Tissue Monitoring

Results from ADEM's 2001 fish tissue monitoring program reveal that most fish sampled from targeted river basins do not have elevated levels of contaminants. However, polychlorinated biphenyl (PCB) levels in a composite sample of striped bass from upper Lay Reservoir and a composite sample of channel catfish from upper Neely Henry Reservoir were above Food and Drug Administration guideline levels.

Body of Water	Type of Advisory	Contaminant
Choccolocco Creek	Do Not Consume Any Fish*	PCBs
Cold Creek Swamp	Do Not Consume Any Fish*	Mercury
Coosa River	Limited Consumption of Catfish over 1 Pound **	PCBs
Coosa River	Limited Consumption of Catfish over 1 Pound **	PCBs
Coosa River	Do Not Consume Any Striped Bass	
Coosa River	Do Not Consume Striped Bass*	PCBs
	Limited Consumption of Largemouth Bass **	
Coosa River	Do Not Consume Striped Bass*	PCBs
Coosa River	Limited Consumption of Spotted Bass**	PCBs
Coosa River	No Consumption of Channel Catfish*	PCBs
Fish River	Do Not Consume Largemouth Bass*	Mercury
Fowl River	Do Not Consume Largemouth Bass*	Mercury
Gulf Coast	Do Not Consume King Mackerel over 39 inches*	
	Limited Consumption of King Mackerel under 39 inches **	Mercury
Huntsville Spring Branch & Indian Creek	Do Not Consume Channel Catfish, Smallmouth or Bigmouth Buffalo, Brown Bullhead or White Bass*	DDT
Lay Lake	Do Not Consume Spotted Bass*	PCBs
Tombigbee River	Do Not Consume Largemouth Bass and Channel Catfish*	Mercury, DDT

* Everyone should avoid eating the species of fish listed.

** A limited consumption advisory states that women of reproductive age and children less than 15 years old should avoid eating certain fish from these areas. Other people should limit their consumtpion of the particular species to one meal per month.

The data indicate that PCBs exceeded the FDA guideline of two parts per million (ppm) in a composite sample of striped bass collected in the vicinity of Elliot Island in upper Lay Reservoir. One fish from a sample of six spotted bass also exceeded FDA levels for PCBs at this location. PCB levels in a composite sample of channel catfish collected at Croft Ferry in upper Neely Henry Reservoir also exceeded the FDA level. Composite samples of additional fish species collected from these locations did not exceed the guideline level.

No, or very little, bioaccumulation of pollutants was detected in bass and catfish from Claiborne, Dannelly, Jones Bluff, Guntersville, Harris, Martin, Yates, Thurlow, and Weiss Reservoirs.

As part of the monitoring program, ADEM also checked for dioxin below bleach kraft paper mills. Bass and catfish (Tennessee River, Tombigbee River, Alabama River, and Conecuh River) showed no or very low levels of dioxin in tissue.

Data from the monitoring program are forwarded to the Alabama Department of Public Health (ADPH) to determine if new fish consumption advisories or changes to existing advisories are necessary.

A total of 363 fish were collected from 31 locations in 15 water bodies. The FY 2001 sampling included water bodies that had not been sampled in the past as well as some currently under fish consumption advisories issued by the ADPH.

All samples were analyzed for contaminants with the potential to bioaccumulate (PCBs, arsenic, chlordane, toxaphene, mercury, mirex, DDT, DDD, DDE, dieldrin, dursban, endrin, heptachlor, heptachlorepoxide, endosulfan, hexachlorobenzene, lindane, and certain heavy metals). Fish are collected in the fall of each year, when their systems are preparing for winter and most pollutants of concern would be expected to be stored at the highest concentrations.

ADEM's monitoring program also included an evaluation of the physical condition of sport and commercial fish species. All fish evaluated were found to be in good to excellent condition. Fish were also checked for external anomalies, such as lesions, tumors, parasites, and deformities. Some 86 percent of the fish checked had no anomalies. The most commonly observed anomalies were lesions on the body surface. These may be the result of bacterial infections associated with changing water temperatures, spawning stress, or a combination of natural occurrences. These infections are not dangerous to the consumer and the fish are edible if properly prepared.

Since the initiation of the statewide ADEM Fish Tissue Monitoring Program in the early 1990s, over 225 sites within all river basins of Alabama have been sampled. The program is conducted in cooperation with the Alabama Department of Public Health, the Alabama Department of Conservation and Natural Resources, and the Tennessee Valley Authority.

Multiple Stream Monitoring Programs Provide Valuable Water Quality Data

In the last five years, ADEM has assessed more than 1,100 stream locations as a part of six major long-term stream-focused monitoring programs. Data collected from each of these programs contribute to the overall understanding of the state's surface water quality and provides valuable insight into the sources of any impairment detected in the state's larger rivers and reservoirs.

Nonpoint Source Assessment Program

Nonpoint Source (NPS) assessments are conducted as *Basin-Wide Screenings* and *Intensive NPS Watershed Assessments*. Basin-wide screenings are conducted to identify major pollution source(s) and to prioritize sub-watersheds for remedial action.

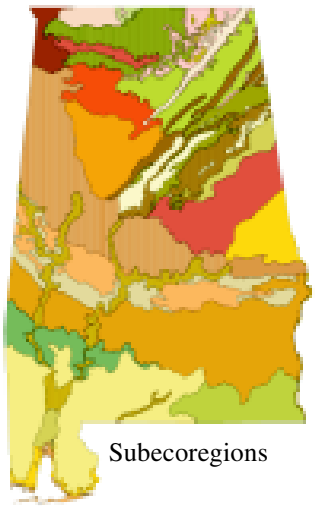
Once remedial actions have been taken within a sub-watershed, *Intensive NPS Watershed Assessments* can be conducted to document and monitor their effectiveness to improve water quality. Intensive NPS watershed assessments generally consist of physical, chemical, and bacteriological sample collection and analysis; and assessments of fish and/or aquatic macroinvertebrate communities, and habitat quality. Assessments are conducted before and after implementation of Best Management Practices (BMPs) to evaluate changes in water quality and physical habitat.

Point Source Assessment Program

Water Quality Demonstration (WQD) studies are conducted on selected streams that receive treated waste from newly constructed or renovated municipal wastewater treatment facilities using partial funding through the Alabama Clean Water State Revolving Loan Program. The data measure improvement of stream water quality resulting from improved wastewater treatment.

Reference Reach Assessment Program

Beginning in 1990, the Department has selected stream reaches, or segments, across the State that are representative of "least-impaired" instream conditions within each of the State's Subecoregions. Reference Reaches are monitored using physical, chemical, bacteriological, habitat, and aquatic community assessments.



Subecoregions

Upland Alabama Monitoring and Assessment Program (ALAMAP-U)

ALAMAP is a statewide probabilistic monitoring effort that provides data used to estimate the current status of the State's upland streams using various environmental indicators. EPA's Gulf Breeze laboratory assisted in the original design of the program and provides the Department approximately fifty randomly-selected sites for chemical, physical, and habitat assessment each summer. The final year of the first five-year sampling cycle was completed in August 2001.

CWA §303(d) Support Monitoring Program

ADEM conducts extensive monitoring of stream segments each year in support of CWA Section 303(d) listing and de-listing decisions and TMDL development by the Department, EPA, and associated contractors. These efforts generally include intensive physical, chemical, bacteriological, habitat quality, and/or biological community assessments.

Fixed Ambient Trend Monitoring Program

Since the 1970s, stream sites have been selected to monitor water quality trends below point sources of pollution with historical water quality problems. Stations at the state boundaries monitor water quality as it flows into Alabama.

State's First Brownfield Project

Alabama's economic base has historically been rooted in the agricultural, manufacturing, textile and chemical production sectors, but because of social and economic shifts, many industries have closed, leaving communities with "brownfields," which are abandoned, underutilized, or vacant properties. Many of these properties have real or perceived environmental contamination issues that prevent prospective buyers from considering them for revitalization, particularly in inner city or remote rural areas.

As a result, these properties remain stagnant, providing neither new jobs nor increases in the tax base. Consequently, the disparity broadens between urban, suburban, and rural areas. Greenfield sites are used for new industries and urban sprawl continues to challenge city and county leaders.

ADEM is actively working with industry groups, EPA, cities, counties, and private sector groups to identify, assess and remediate many of these properties. The Alabama Land Recycling and Economic Redevelopment Act (ALRERA) was passed by the Alabama Legislature to provide the framework for a voluntary assessment and cleanup program for the state.

ADEM is also conducting or overseeing the assessment of sites under the Pilot Brownfield program and the Targeted Brownfield Assessment program, both funded by EPA. Combined state and federal efforts are making great strides in revitalizing old industrial sites and returning properties to productive use.

New Tuscaloosa Building

A new office building in Tuscaloosa is the first project undertaken as part of the Alabama Land Recycling and Economic Redevelopment Act, passed by the Legislature earlier this year. The act encourages the redevelopment of former industrial sites by limiting liability to property owners who voluntarily address any conditions that may present a threat to human health and the environment.

ADEM and Renaissance Development L.L.C. signed an agreement to facilitate Renaissance's redevelopment of a former steel warehouse location and adjacent property at 22nd Avenue and 4th Street in Tuscaloosa.

As part of the agreement, the company will investigate potential environmental problems at the site, create a plan to clean up or lessen the impact of those problems, carry out and complete the plan thereby allowing for commercial development of the property.

This act provides a legal mechanism to encourage cleanup of properties which may not otherwise be addressed. The program will encourage re-use of sites with existing infrastructure such as utilities and roads instead of continued development of greenfield properties. This helps conserve undeveloped land while fostering reuse of dormant industrial sites.

The act also charges ADEM with the responsibility of reviewing all cleanup plans and activities to ensure they meet or exceed requirements of environmental regulations and guidelines.

A coalition of interests supported passage of the act, including the Governor, the Business Council of Alabama, ADEM, and several environmental groups. Alabama's state law complements the federal Brownfield program, which has similar goals. Some properties that are not eligible for the federal program may be addressed through the state effort.

The Alabama Land Recycling and Economic Redevelopment Commission will perform a national survey of incentives and make recommendations for enhancing Alabama's

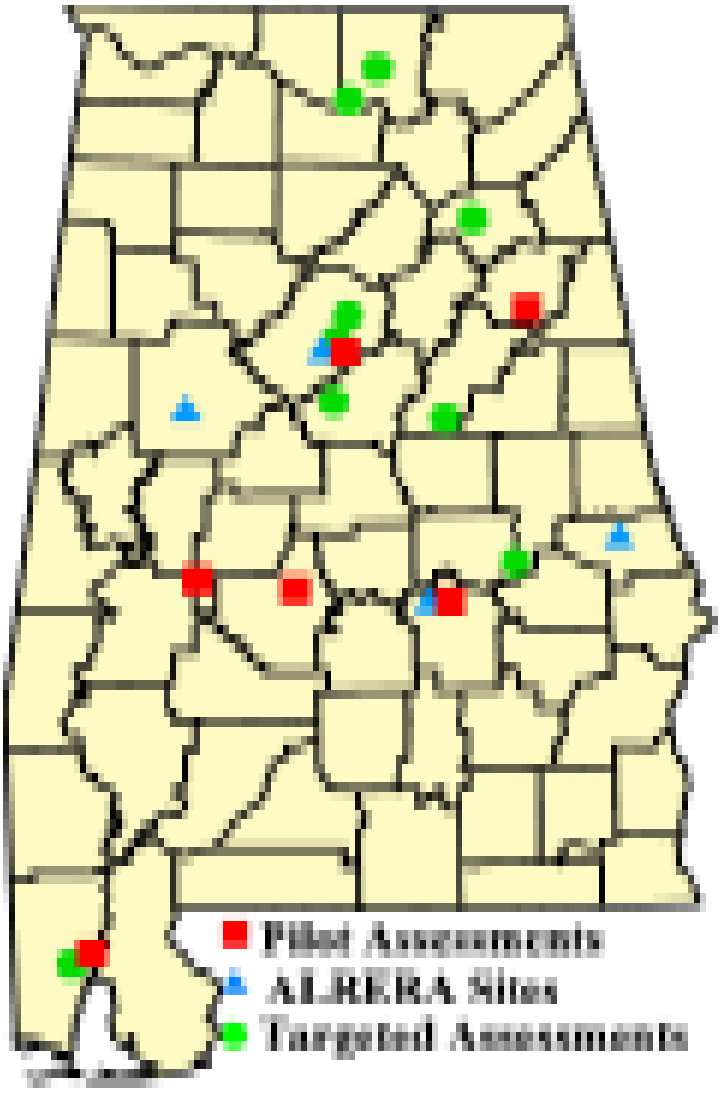
program to the Legislature during the 2002 regular session and each regular session thereafter.

Birmingham Brownfield

At the request of the City of Birmingham, ADEM conducted environmental assessments for four properties in the North Birmingham Industrial Redevelopment Project area. This area, which was heavily industrialized until the 1970s, may have more underutilized properties than any other area in the state. The city's ultimate goal is the creation of a 150-acre industrial park. Of the four properties assessed by ADEM, three are now being used for industrial operations. These industries now provide more than 100 permanent jobs, $200,000 in annual tax revenue for the city and a renewed sense of pride and economic stability for area citizens.

Pilot and Targeted Brownfield Assessments

Since 1997, ADEM has been involved in assessing Brownfield Pilot Projects in which EPA funds environmental assessments through local communities. Alabama projects include Anniston, Montgomery, North Birmingham, Prichard, Selma, and Uniontown (Perry County). The department's involvement has ensured that federal funds are spent wisely and that scientific accuracy is maintained. ADEM has conducted 24 projects as part of this program. EPA provides funds directly to ADEM to conduct Targeted Brownfield Assessments. Some 12 targeted assessments have been completed.



Operation Trash Cam will Help Clean Up Unauthorized Dumps in Alabama

ADEM introduced a new weapon to fight illegal dumping in August 2001 with Operation Trash Cam, a pilot project featuring a surveillance system to identify people who are putting trash and garbage in unauthorized dumps.

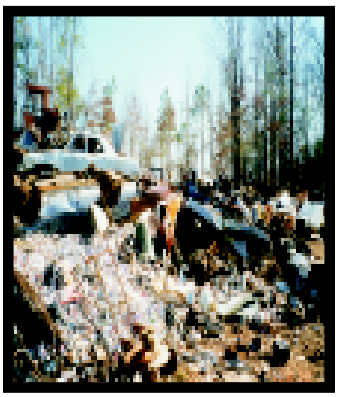
The Alabama Forestry Association provided the video equipment used as a part of Operation Trash Cam in a cooperative effort with ADEM. Unauthorized dumps are often located on timberland, and can therefore constitute considerable problems for landowners sometimes faced with cleaning up dumps created by others.

Unauthorized dumps are always unsightly and often serve as breeding grounds for rats, flies, roaches, and mosquitoes. They can also affect water quality when located near a stream, river or lake.

The battery-powered video cameras and recording units are specially designed to be easily concealed. ADEM personnel install the equipment at known dumpsites. The cameras are fitted with motion detectors that will record activity at the site. These videotapes from Trash Cam will then be used to identify those who are dumping illegally through automobile license plate or other means of visual identification.

ADEM will then pursue action that may include a fine, a requirement to clean up or help clean up the dump, or other measures appropriate to achieve compliance with state solid waste regulations. The agency will share information with local district attorneys or other law enforcement personnel in its efforts to stop illegal dumping.

The state environmental agency estimates that there are approximately 100 unauthorized dumps in each of Alabama's 67 counties.



DID YOU KNOW .....

Approximately 70 illegal dumps were abated in 2001.

Investigation Continues On Coliseum Boulevard Plume

The Coliseum Boulevard Plume site is a 682-acre area located in north Montgomery with underlying ground water contamination resulting from earlier use of an industrial solvent. The site is roughly bounded by Lower Wetumpka Road to the west, Emory Folmar Boulevard to the east, Northern Boulevard to the North, and CSX Railroad to the south. The contaminant of concern is a solvent called trichloroethylene and related compounds. The impacted ground water is at a depth of 25 to 45 feet below the surface. Surface water in a ditch impacted by ground water has also become the focus of the investigation.

Studies have demonstrated that drinking water for the City of Montgomery has not been impacted. A city treatment plant that withdraws water from the Tallapoosa River supplies drinking water in the area.

ALDOT and the State Department of Finance Printing and Publications are both located in the south central part of the site. Both have had historical use of trichloroethylene and other users may subsequently be identified, ALDOT has entered into an agreement with ADEM to conduct an environmental assessment and remediation of the site.

In the fall of 2001, ALDOT began its efforts to establish a Community Outreach Group, consisting of citizens and business representatives in potentially impacted communities.

Since ADEM began work in 1999, a total of 77 wells and about 106 soil borings and probe holes have been installed to help identify the extent of the contaminant plume. In early 2001, a fence was installed around portions of the ditch to prevent public access in areas where elevated levels of trichloroethylene have been detected.

ADEM will continue to provide regulatory oversight to ensure that human health and the environment are protected from any potential contamination at the site.

Anniston Incinerator Plans Surrogate Burns

In accordance with federal law, the U.S. Army has built the Anniston Chemical Agent Disposal Facility (ANCDF) to destroy chemical weapons and agents stored at the Anniston Army Depot.

The facility is regulated by ADEM through permits issued under state air quality regulations and the Alabama Hazardous Waste Management and Minimization Act. Regulated activities include the treatment and disposal of chemical weapons and agent as well as corrective action for any potential soil and groundwater contamination at the site.

The permit requires that a successful demonstration of the incinerator and pollution abatement system be conducted with non-hazardous surrogates before beginning incineration of chemical agent. ADEM approved the Surrogate Trial Burn Plan for the system in October 2001. Surrogate trial burns are scheduled for 2002.

The principal operating units are three incinerators: Liquid Incinerator, Deactivation Furnace, and Metal Parts Furnace. The Liquid Incinerator will destroy the liquid nerve and blister agents drained from munitions and bulk containers. The Deactivation Furnace will destroy explosives and propellants and the Metal Parts Furnace will be used to thermally clean the remaining metal parts.

The facility is undergoing construction and systemization to ensure proper and safe operation of the complex machinery and electronic controls. The Liquid Incinerator and Deactivation Furnace have been fired with natural gas to cure refractory brick construction in the primary and secondary combustion chambers.

Honeywell Voluntary Cleanup

An environmental cleanup project undertaken by Honeywell International, Inc. (formerly Allied Signal) eliminated potential exposure to contamination in the City of Fairfield and improved the city's infrastructure.

During recent environmental studies, the company determined that tar residues were present in soil along the banks of a ditch that drained a portion of the facility. The ditch also provided stormwater drainage for more than 400 acres of industrial, commercial, and residential property.

Honeywell assumed responsibility to clean up approximately one mile of the ditch, beginning on an area upstream of the facility.

The Corrective Action Plan was reviewed and approved by ADEM and shared with the Mayor and City Council of Fairfield. The city worked with other property owners to ensure that the remediation project moved forward in a timely manner.

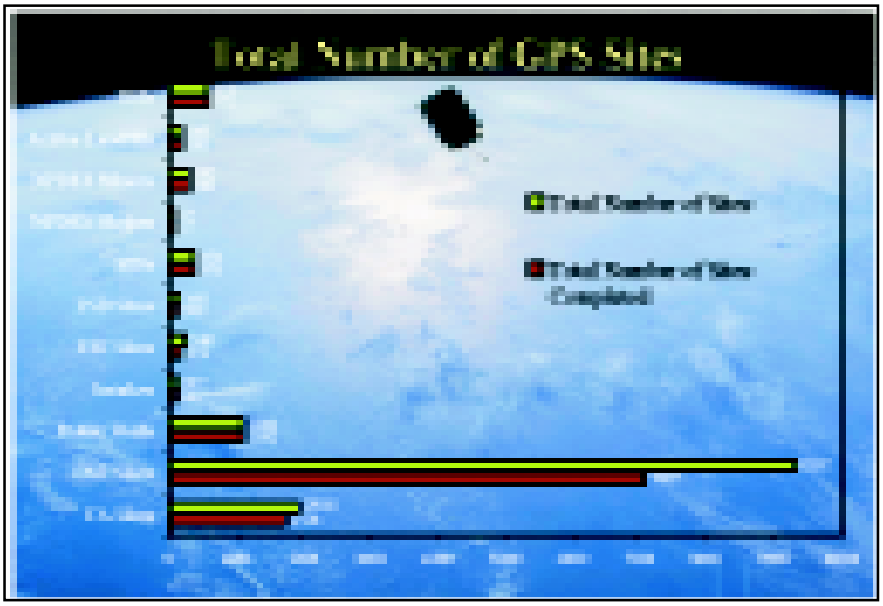
The reconstructed ditch design provides an approximate fourfold increase in peak discharge capacity. Honeywell removed more than 9,000 tons of impacted materials for off-site disposal at an ADEM-permitted disposal facility and installed 6,000 square yards of ditch lining.

Honeywell excavated bank soils and voluntarily reconstructed the ditch into a regular trapezoidal channel with a concrete liner. The excavated area was backfilled with clean soil and planted with grass seed. Fencing was installed to prevent unauthorized access to the ditch. Besides significant contaminant reduction in the environment, the project aided in the elimination of potential future off-site exposures associated with the ditch, significantly increased peak discharge capacity, and improved flow along the ditch.

GPS and GIS at ADEM

What is GPS?

In 1993 the Department of Defense (DOD) completed a network of navigational satellites that made up the Global Positioning System (GPS). The GPS is a network of ground base transmitters, a constellation of 24 satellites in 12-hour orbits and receivers on the ground. GPS can determine a location, usually expressed as latitude and longitude, almost anywhere on earth with an accuracy that can vary from hundreds of meters to centimeters. The hand-held GPS mapping grade receivers most commonly used are accurate to within 2 – 5 meters. Besides determining a location, these hand-held devices also allow the input of information that describes the collection point (attribute data). Combining the location of a point with this attribute data allows the creation of detailed and accurate maps.



The associated chart represents the total number of sites that have been located with GPS in Alabama.

What is GIS?

A Geographic Information System (GIS) is a computer system that can electronically store virtually any information found on a paper map. However, a GIS is much more useful than a traditional map because the electronically stored data can be used to make a variety of maps fitted to very specific purposes. A GIS can provide information about features on the map, including roads, rivers, places, and demographics. With a GIS, searches can be performed on the data that were not possible with traditional maps.

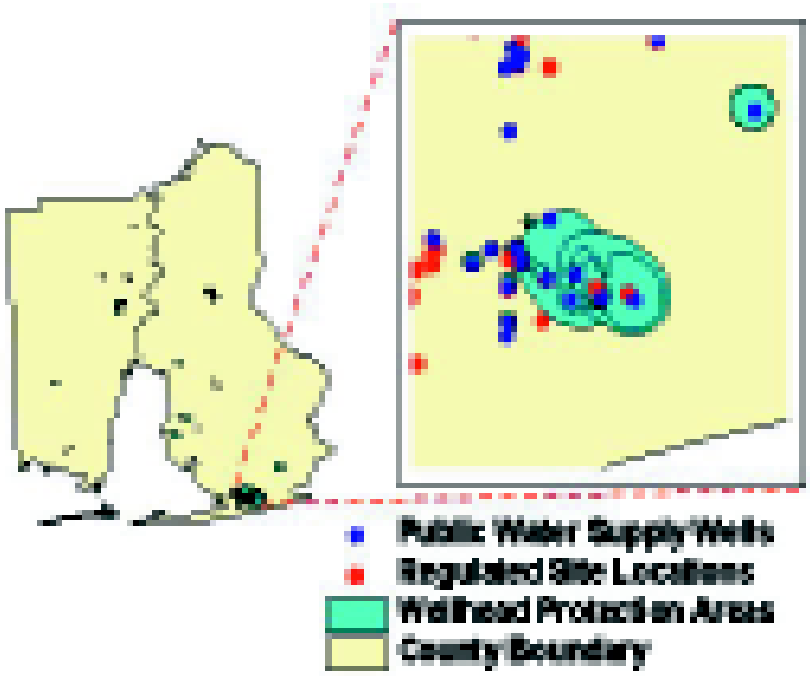
In a GIS, real-world features on the earth's surface are related to a map coordinate system and are recorded in the computer. A GIS system stores the coordinates of the features and the attribute data associated with the features. The attribute data shows the user what the feature represents. Using the power of a GIS, features can be quickly drawn in combination with other map data and at virtually any scale.

Looking at data geographically can often suggest new insights and/or explanations. It can suggest connections that are often unrecognized without a GIS.

Integrating GPS and GIS at ADEM

Once sites of interest have been located with the GPS, these sites can be displayed using the GIS. The site locations can be displayed with other data layers. ADEM commonly displays the location of regulated facilities over water, street, and county boundary layers. It is often useful to display other facility information contained in one of ADEM's databases along with the location on a map.

One common use of GIS by ADEM is determining if a regulated site is located in an area that is particularly sensitive to the release of pollutants. For example, the GIS-produced map below shows several regulated sites located within a wellhead protection area in Baldwin County.



Pollution Prevention Awards Recognize Efforts of Alabama Businesses

ADEM presented its second annual Pollution Prevention Awards to six businesses during a news conference in October 2001.

ADEM began the Pollution Prevention (also known as P2) Awards program in 2000 to reward companies and defense facilities that go the extra mile for environmental protection. The awards also promote education regarding the use of Pollution Prevention to solve problems and conduct more efficient operations.

Director's Awards recognize facilities that have implemented facility-wide written P2 plans and have demonstrated environmental benefits. Achievement Awards are presented to facilities that demonstrated P2 benefits through individual projects or activities.

Companies that take on pollution prevention projects receive an added benefit because they are helping protect the environment, as well as making their operations more profitable and competitive. These awards recognize companies that have implemented P2 programs while encouraging other businesses in Alabama to consider pollution prevention as a worthwhile endeavor.

Pollution Prevention is the use of materials, processes, or practices to reduce or eliminate the creation of pollutants at the source. Common P2 practices may include reducing energy and water demand, reducing the use of hazardous materials and other resources, and protection of natural resources through conservation or increased efficiency. Reducing sources of pollution reduces costs, improves efficiency, enhances workplace safety, and fosters a sense of satisfaction from helping preserve the environment.

2001 Director's Award Winners

3M Decatur

The 3M plant in Decatur manufactures specialty chemicals and films. The facility developed a process to return 85 percent of stockpiled intermediate product into final production, saving 94 tons of scrap and $330,000 in raw material costs as well as eliminating 33 tons of air pollution. It also reduced scrap generated in manufacturing a carpet protector product by 80 percent, saving more than $700,000 and reducing waste by 44 tons.

Occidental Chemical of Mobile

Occidental Chemical's Mobile plant converted from mercury based chlor-alkali production to environmentally superior membrane technology in 1991. Due to the conversion from mercury cell to a membrane process, the facility greatly reduced its discharge of mercury. This effort reduced hazardous wastes generated from 38 tons per year to three tons per year. The P2 project also saved the company approximately $51,000 annually and reduced its consumption of natural gas. The company also reduced its Freon emissions by 63 percent from 1999 to 2000.

Occidental Chemical of Muscle Shoals

The Muscle Shoals facility operated by Occidental Chemical Corp. is the only U.S. producer of potassium bicarbonate. The plant is also the world's largest producer of potassium carbonate and caustic potash. The facility reduced its wastewater with hazardous content by 25 percent, reduced hazardous solid by 21 percent, reduced air emissions of mercury by 25 percent, and reduced mercury in wastewater by 71 percent.

2001 Achievement Award Winners

Boise Cascade Jackson Mill

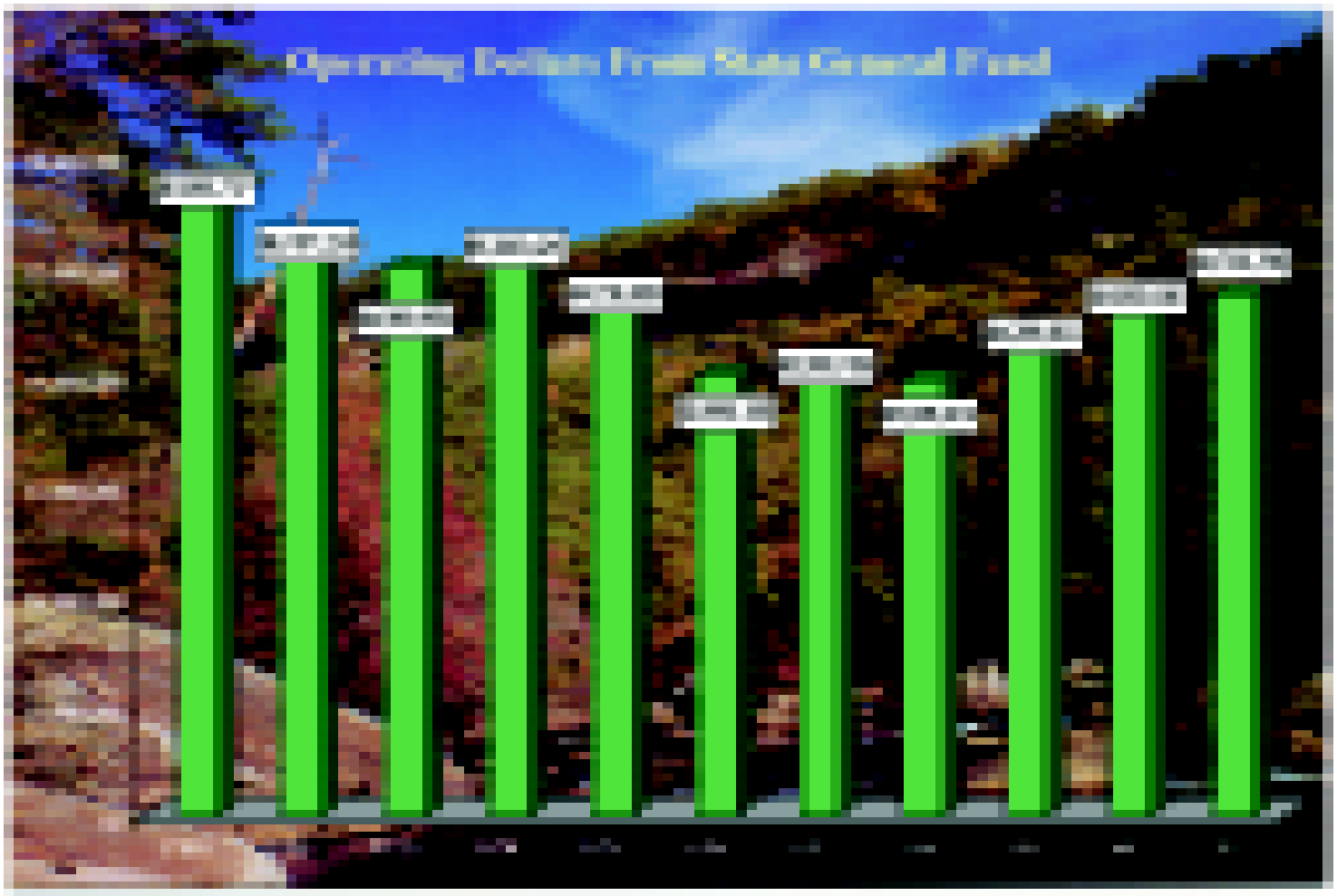
Boise Cascade operates a paper manufacturing facility in the Washington County town of Jackson. The facility used P2 methods to reduce solid wastes and extend the life of an on-site landfill. The mill diverted more than 17,000 cubic yards of boiler ash, fly and bottom ash from its landfill. The ash was used as an ingredient in cement, potting soil, and road building aggregate. Wastes with a high calcium oxide content were provided to area farmers and a fertilizer plant. Wood waste was used as compost by potting soil manufacturers, and sludge was used as a fuel and ingredient in roofing paper. Total results of the program included the diversion of 182,000 cubic yards of material from the landfill, saving the facility approximately $1.7 million.

Alabama Power's Barry Steam Plant in Mobile

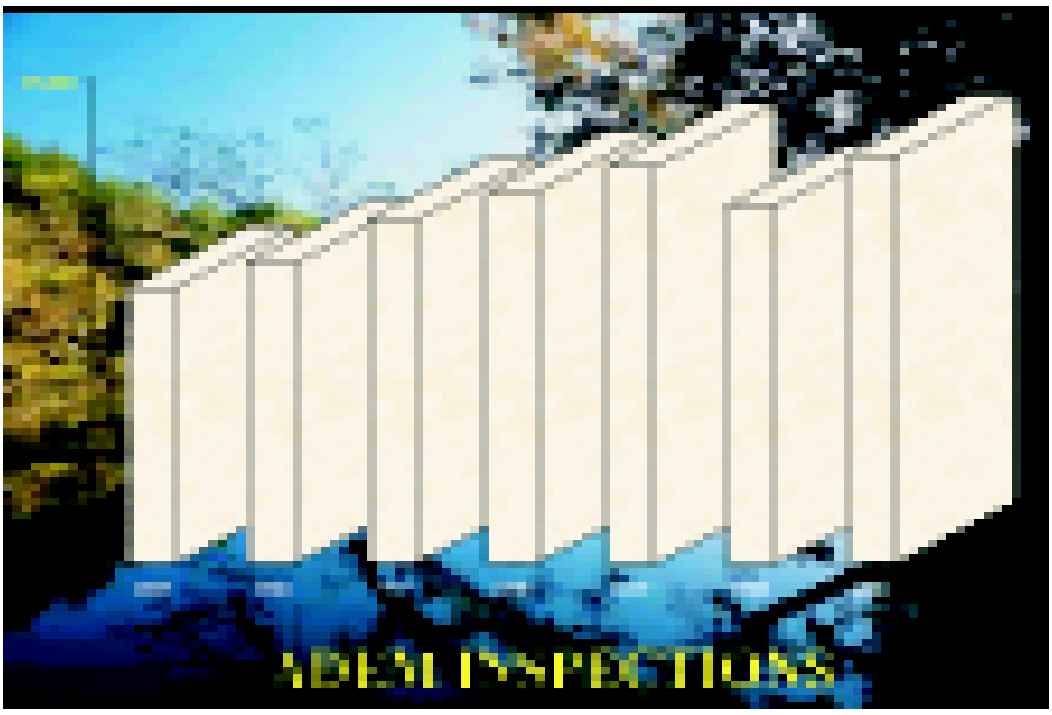
Barry Steam Plant is an electric generating plant located on the banks of the Mobile River. The plant has five coal-fired units and one natural gas fired combustion turbine unit. A large volume of high purity water is required to make steam used in the process of generating electricity. A reverse osmosis system was installed at the facility to treat water before it passes through an ion exchange demineralizer plant. Use of this system resulted in reducing treatment chemicals by 650 tons.

Ciba Specialty Chemicals in McIntosh

The 1,500-acre Ciba Specialty Chemicals plant in McIntosh produces additives for plastics, paints and oils, optical brighteners used in detergent, paper and textile industries as well as herbicides, pesticides and insecticides. The company implemented process changes to reduce excess reactant. The project improved yield by four to five percent, reduced a wastewater pollutant by 90 percent, and saved energy. By lowering the crystallizer end temperature by five degrees, the facility was able to reduce total organic carbon concentrations by 12 percent and improve utilization of raw material by 19 percent.



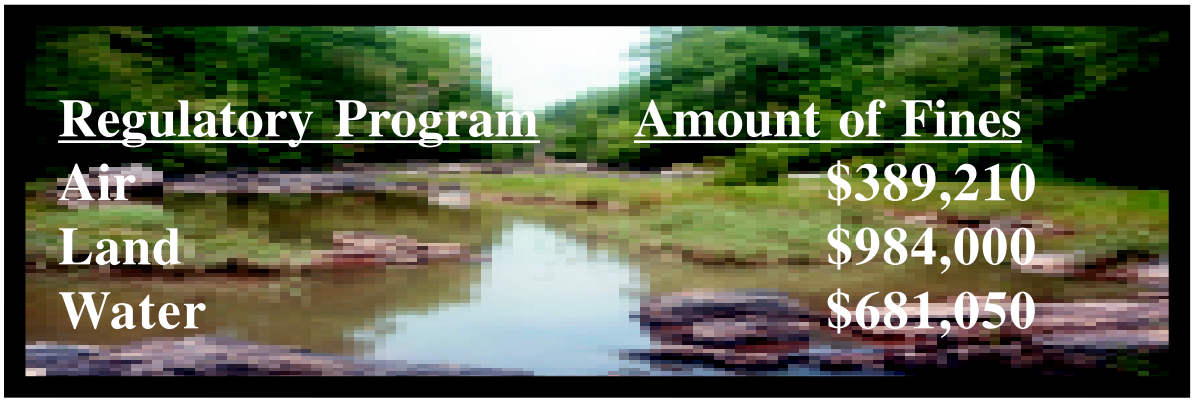
In the past ten years, state funding for the environment has decreased over 16% or approximately $1 million dollars. If the earmarked monies to support the CAFO program, which began in FY99, are considered, the picture for basic programs is even more grim. Alabama continues to rank last in per capita spending on environmental issues. Given the current condition of the State General Fund and the fact that no growth is projected in the near future. ADEM must secure funding through other venues.



Although state environmental funds have declined, ADEM has been able to increase overall inspections, using federal grant funds, departmental fees and fines, and implementing measures to improve overall efficiencies throughout the department.

ADEM SETS RECORD WITH $2 MILLION IN FINES FOR ENVIRONMENTAL VIOLATIONS

ADEM set a record for enforcement during fiscal year 2001 with more than $2 million assessed for violations of environmental regulations. The agency issued a total of 225 administrative orders and 208 of those orders included monetary penalties.

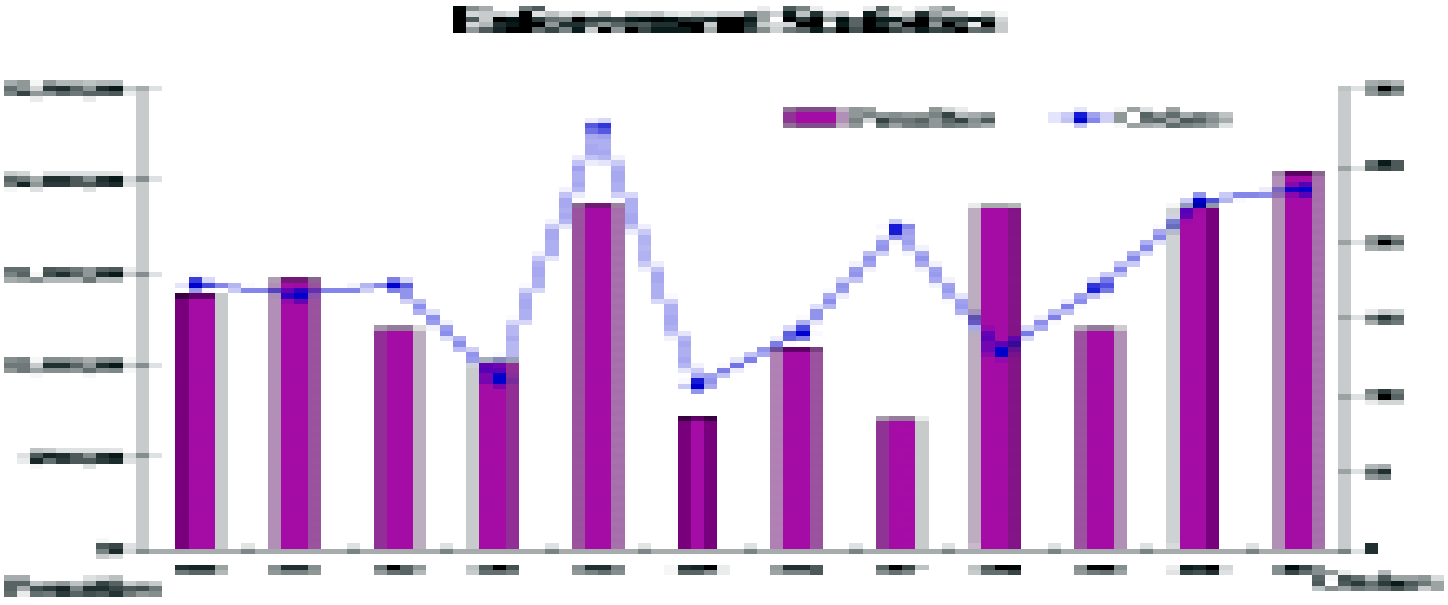


The monetary total for FY 2001 represents an increase of more than 10 percent over the previous year. Administrative fines, minus ADEM's enforcement costs as allowed by the Examiner of Public Accounts, are remitted to the state's general fund. The fines are published in local newspapers through legal notices. The agency assessed $1,198,355 in penalties in FY 1999 and $1,855,255 in FY 2000 Fines.

In the table above, land penalties include activities associated with solid and hazardous waste regulations, while water penalties encompass a number of programs: National Pollutant Discharge Elimination System; Mining and Nonpoint Source; State Indirect Discharges; Under Ground Storage Tanks; and Drinking Water.

An administrative order is an enforcement mechanism used by ADEM to establish a method and schedule for compliance when violations of environmental regulations occur. Failure to comply with an order can result in legal action for the recovery of civil penalties, criminal fines, or other appropriate sanctions.

ADEM assesses administrative penalties based on the seriousness of the violation, the standard of care shown by the violator, any economic benefit of delayed compliance, preventive efforts, compliance history, and the ability to pay a fine.



Environmental Briefs

Water System Security

After the terrorist attacks of September 11, ADEM organized a special training session for all drinking water systems in the state. The FBI, U.S. Justice Department, the Alabama Attorney General's office and numerous other agencies shared common sense methods to secure and protect drinking water.

Legacy Provides Education

Legacy, a non-profit corporation, is a partnership of state and federal agencies, businesses, environmental groups, educators, associations, and conservation groups. Its mission is to provide comprehensive fact-based environmental education materials and programs without duplicating efforts of others.

Legacy's broad range of environmental education activities in 2001 included sponsoring 19 Earth Day events and awarding 23 environmental scholarships. It awarded 17 grants totaling more than $100,000 and conducted a two-week Summer Institute for 19 teachers. Legacy's annual calendar art contest drew more than 1,500 student entries and winners had their art published in a full-color calendar.

The organization has also produced an educational series of full-color posters that detail wildlife, plants, air and water quality and soils specific to Alabama. Legacy also produces posters, brochures, pamphlets and booklets geared toward informing citizens on how they can help protect and improve the environment.

Water Watch Grows

Some 70 citizen groups, including 13 newly-formed groups, submitted water quality data to Alabama Water Watch during 2001.

Alabama Water Watch is a statewide program dedicated to developing citizen volunteer monitoring of the state's lakes, streams and wetlands. It is funded by EPA and ADEM and coordinated through the Department of Fisheries and Allied Aquacultures at Auburn University.

The organization also published Volume 1 of its Coastal Series of Reports and reported data collected by Lake Watch of Lake Martin to the Middle Tallapoosa and Lower Tallapoosa Clean Water Partnerships.

Alabama Water Watch also changed its website address to www.alabamawaterwatch.org.

Laboratories Continue to Excel

The department's laboratories performed 43,991 determinations to support ambient environmental quality assessments and compliance assurance. The ADEM Central Laboratory achieved a 95.8 percent accuracy rate, continuing its status as one of the most accurate labs in the Southeast.

State Fund Used to Clean Up Waste Sites

The Alabama Hazardous Substance Cleanup Fund evaluated and/or cleaned up 25 sites contaminated with hazardous wastes at an expenditure of more than $172,000 in 2001.

The fund was established by the Alabama Legislature in 1988 to provide funding to address sites contaminated with hazardous substances—sites unlikely to receive funding under the federal Superfund program.

Funds were used for disposal fees, contractual cleanup services, analytical costs and salaries. Projects varied dramatically in scope, ranging from removal of a single drum to providing oversight for significant excavation, disposal and cleanup at a facility.

Since its inception, the fund has addressed approximately 300 sites, with 250 of those having been cleaned up to an extent that no further actions were needed. The remaining sites either have cleanups pending or are being monitored for future remedial action.

Mercury Deposition Monitoring

ADEM is continuing the state's first program to measure mercury deposited through rainwater in Mobile and Baldwin counties.

Samples taken from the monitoring stations are used to determine how much mercury and nutrients are deposited in local watersheds through rainfall. The data gathered will be part of the National Atmospheric Deposition Program, which consists about 250 monitoring sites from Alaska and the continental United States to Puerto Rico and the Virgin Islands.

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THE ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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